

INFRARED DETECTION OF SOLAR CELL DEFECTS UNDER FORWARD BIAS

Abstract

Methods and apparatus are disclosed for detecting solar cell defects by applying a forward-biasing electric current through a silicon solar cell or a group of interconnected solar cells for a short duration and then analyzing the resulting thermal image of each cell with an infrared (IR) camera. The invention is particularly useful in assembling solar cell arrays or modules in which large numbers of cells are to be wired together. Automated module assemblers are disclosed in which the cells (or strings of cells) are tested for defects prior to final module assembly.